Chapter 140 Managing Project Delivery

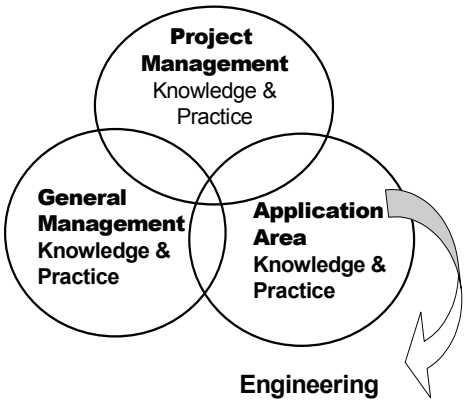
140.01 General

This chapter outlines the principles and methodology adopted by the Washington State Department of Transportation (WSDOT) for successful project management and delivery. Managing Project Delivery (MPD) is the standard practice adopted by WSDOT to manage projects and provides a method to meet the WSDOT Management Principles. (See WSDOT Management Principles at http://www.wsdot.wa.gov/accountability/mgmtprinciples.htm)

Project management requires the application of skills, knowledge, tools, and techniques to deliver the project on time, within budget, and according to specifications. There are proven industry standards for project management, such as the Project Management Body of Knowledge (PMBOK) through the Project Management Institute (PMI). The MPD process, as adopted by WSDOT, is based upon those industry standards.

While terminology may vary, the principles of project management are consistent. A project manager needs more than tools to succeed in delivering quality projects on time and within budget. Project managers with the knowledge and skill to lead a team toward a common goal will optimize team member talents to the best benefit of the team.

The WSDOT project manager must apply three overlapping disciplines (skills) for effective project management as illustrated in Figure 140-1.



Overlapping Disciplines for Successful Project Delivery
Figure 140-1

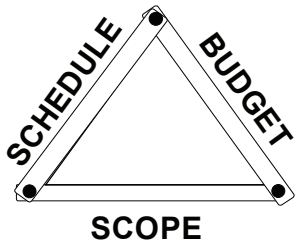
Key features of effectively managing project delivery include the following:

- Building an interdisciplinary team with the necessary skills and understanding of the project.
- Effectively defining the project scope and managing that scope throughout the project delivery process.
- Scaling the process based on project complexity and team size.
- Including customers in the project delivery process.
- Effectively and continuously communicating.
- Managing customer expectations.
- Managing change.

Transportation projects are complex and require the coordination of interrelated activities. Meaningful communication between the project manager, team members, sponsor, stakeholders, and customers is a critical component of project management. A skilled, coordinated, and collaborative team will find effective solutions and deliver projects more successfully than individuals working alone. Managing Project Delivery tools align teams by establishing a common understanding of the project. They enable development and execution

of a collaborative work plan that is comprehensive, realistic, and deliverable.

Ongoing and active management of the project's scope, schedule, and budget ("Trade-Off" triangle) as shown in Figure 140-2 is a primary focus of project management. Scope, Schedule, & Budget are each project constraints and must be actively monitored and managed throughout the project delivery process.



Project Management Trade-Off Triangle
Figure 140-2

The Project Delivery Information System (PDIS) is a tool for effective and efficient management of project schedules, assigned resources, and the resulting cost to complete projects. PDIS enhances communication and coordination between staff engaged in project and program delivery at the project team, office, region, and statewide levels. See the PDIS definition for the PDIS web address.

140.02 References

WSDOT Management Principles, April 2002

WSDOT "Managing Project Delivery" training manual

A Guide to the Project Management Body of Knowledge (PMBOK), 2000, The Project Management Institute

140.03 Definitions

customers The customers for a project are the users of, and those directly affected by, the project's product.

CIPP The Capital Improvement and Preservation Program for which change management procedures are in place including the Project Control Form at: wwwi.wsdot.wa.gov/ppsc/pgmmgt/dpsb/

CMP Change Management Plan. See 140.05(2)(h).

deliverable A tangible work product; such as Channelization Plans, Environmental reports, Traffic Analysis reports.

MDL The Master Deliverables List implemented as part of the PDIS, is a standardized work breakdown structure, down to the deliverable level. See 140.05(2)(a)

MPD The process called Managing Project Delivery that is described in this chapter.

PDIS The Project Delivery Information System is an MPD tool for project planning, scheduling, resource balancing, and cost management. See wwwi.wsdot.wa.gov/projects/PDIS/

project A temporary endeavor undertaken to create a unique product or service.

project manager The person responsible for conducting the project's effort and delivering the end product.

resources People, tools, and/or materials necessary for project delivery.

scalability Scale, defined by Webster's, is a progressive classification, as of size, amount, importance, or rank. In other words, scalability is the level of work planning required based on the project size, project complexity and team size. The project manager determines the appropriate level of detail.

specialty groups Functional groups responsible for specialized services or products (Environmental, Traffic, Bridge & Structures, Landscape Architecture, Geotech, Right of Way, Materials, and so forth.) Specialty groups are both customers and suppliers to the project design team.

sponsor The person assigning the project manager the responsibility to conduct the project's effort and deliver the end product.

stakeholders Those with a particularly significant interest in the project's outcome including those providing funding or right of way for the project and property owners who are affected by the project. Stakeholders are unique for each project.

team A designated group of people working together with a common purpose.

WBS Work Breakdown Structure. In its simplest form, the WBS is a list of deliverables and tasks to be completed to accomplish the project purpose. The MDL is a standardized WBS developed by WSDOT to assist in the development of a project specific WBS. See 140.05(2)(a) and 140.05(2)(b).

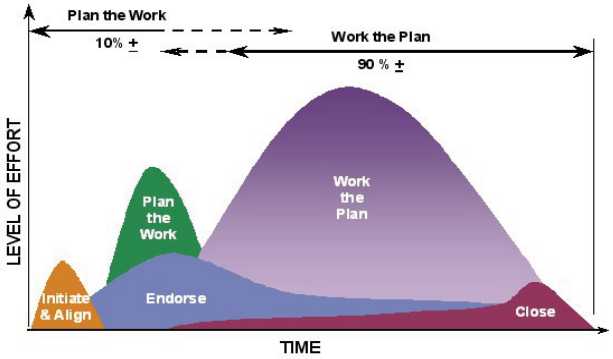
work plan A comprehensive, realistic, and deliverable plan to accomplish the team mission and deliver the project. It includes Plan the Work elements, including a schedule and a budget.

140.04 Resources

The HQ Project Delivery Resource Group (PDRG) provides training, and assistance in implementing the principles of Managing Project Delivery and the use of PDIS tools.

140.05 Managing Project Delivery

Successful project delivery requires active project management and a team that acts with a common purpose. Managing Project Delivery is applied by project managers and teams. It includes five basic steps, each with supporting elements, as shown in Figures 140-3 and 140-4. Each of these steps and elements are described below.



Relative Effort

Figure 140-3

The five steps of Managing Project Delivery can be further simplified into two basic phases:

- Preparation – "Plan the Work"
- Execution – "Work the Plan"

In a typical project application, planning the work, (the first three steps) will constitute approximately 10% of the total project effort and time. Steps four and five will constitute approximately 90% of the project effort and time.

The need for some project tasks to start immediately can be so apparent that "working while planning" is, at times, both necessary and appropriate. The project manager, team, and sponsor must endorse the advance work to be done before work planning is complete. For example, Site surveying, aerial photography, and traffic counts.

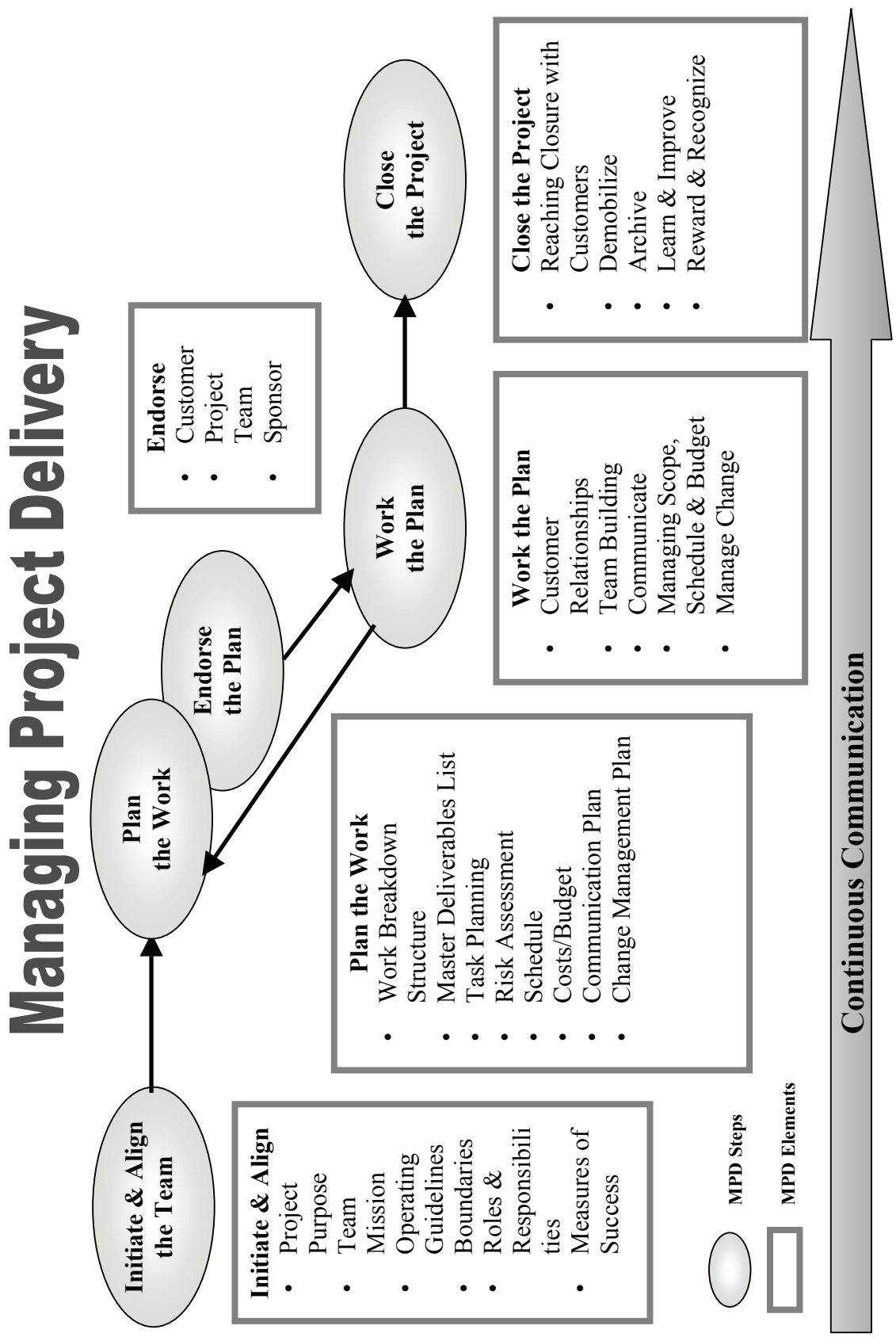
Adapt MPD to Your Project and Team

How and to what degree each of the MPD steps and elements are applied depend on:

- Project Size
- Project Complexity
- Team Size
- Stakeholder Involvement
- Potential resistance to the project

This is called scalability. The project manager determines the appropriate level of detail on a project by project basis. Typically, all steps and elements are applied to large projects, in order to build a common understanding of the project and ensure the development of a comprehensive work plan.

An efficient approach to developing a project work plan is to have a core group develop initial drafts of the various elements (project purpose, team mission, and WBS, for example). The full project team can then review and alter them as appropriate. This reduces the need for involvement by specialty groups who participate in numerous project teams. *However, specialty groups still need to endorse the plan.*



Steps and Elements
Figure 140-4

(1) Initiate and Align the Team

Initiate The process of formally recognizing that a new project exists (this includes transition of projects from one phase to another (Scoping to Design).

Align Building a common understanding of the project and developing a common view of what the solution will and will not address; setting the stage for scope development. A project purpose and mission can help align the team.

While the assignment of organizations and individuals to a project is an essential first step, mere assignment does not result in an effective team. Teams must be built and sustained. For successful project delivery, the participants must conduct their efforts in a coordinated and complementary manner. Establishing communication among the people who will develop and deliver the project is the most important function of this first step of Managing Project Delivery. Gaining each persons understanding of the problem and their buy-in to the solution is key to effectively managing the project scope. (See 140.04(4)(b) for further definition of Team Building)

A project team is a designated group of people, including specialty groups, working together with a common purpose related to a specific project.

The project manager assesses the project and assembles a team with the necessary skills to accomplish the project effort. Most projects require multidisciplinary participation. The project manager must secure individuals from appropriate specialty groups (potentially including Bridge, Environmental, Geotechnical, Landscape Architecture, Local Programs, Materials, Real Estate Services, Traffic, Utilities, and others).

To be effective and efficient, the teams' efforts must complement one another in support of accomplishing a common purpose, in other words, to function as a collaborative team. *This does not mean that all team members must participate in every team meeting or project work session.*

Continuous communication with and seeking endorsement from customers is an essential aspect of successfully managing project delivery. Depending on the scope of the project, participation on the team by customer "partners" is appropriate and can serve to ensure that the product meets customer expectations. Some project managers form a Steering Team or Citizen Advisory Committee to facilitate this communication. Individual representatives of a larger customer group on a steering team must be delegated the authority to make decisions for that group. The group is then held accountable to abide by the decisions made at team meetings. The WSDOT customer base is very diverse. Customers use and are affected by our projects. They have concerns for mobility and safety within their communities. Examples of customers that may have interest in the project are:

- Elected officials at the federal, state, and local level.
- Representatives of Indian tribes.
- Staff from appropriate agencies or jurisdictions.
- Staff from permitting agencies.
- Stakeholders.
- Neighborhood residents.
- Citizen groups.
- Individuals who regularly use the facility.

Meaningful customer interaction involves communicating directly with individuals and groups in a manner that lets them know they have been heard. Such interaction is fundamental to accomplishing context sensitive design. Continuous communication is another key to successful project delivery.

(a) Project Purpose

What will be the result of this project?

The project purpose establishes the common goal toward which all project activities and efforts strive. It describes the desired or intended result or effect.

(b) **Team Mission**

How will the team accomplish the project?

The Team Mission describes the overall actions the team will take to accomplish the project. It is usually a short paragraph developed with input from the team, including project sponsors, participating stakeholders and customers.

In this chapter, "the project" means the Team Mission — The word "project" is used throughout this chapter. It is important to understand the distinction between the Team Mission and a "Highway Construction Program project." A Highway Construction Program project is developed in phases [scoping, design/PS&E (including right of way), and construction.] A specific Team Mission may be limited to a specific phase or phases of a Highway Construction Program project. The Team Mission of any given project team may not attain the ultimate end product of the Highway Construction Program project as described by "the project purpose."

The Team Mission statement is of particular importance during project work planning as it clearly defines the scope of the Work Breakdown Structure (WBS) starting with tailoring the Master Deliverables List [140.05(2)(a)].

(c) **Operating Guidelines**

Operating guidelines describe how the team will govern itself. The functions most commonly performed by the team and guidelines to steer it in those functions are identified. Listed below are some guidelines the team might wish to develop:

- Team decision process.
- Team meetings (such as structure, timing).
- Communication (such as methods, uses, frequency, protocols).
- Measuring team performance (such as team surveys, self-assessments/evaluations).
- Managing team disagreement and conflict.
- Managing team change (such as changes in team membership).

(d) **Boundaries**

Boundaries define the limits relevant to the project and the team's mission. Most boundaries are set by the organization and transmitted to the team by the project sponsor. Some boundaries are established by other entities beyond the team. Boundaries might fall within the following areas:

- Geographic.
- Financial.
- Legal and regulatory.
- Mandatory product or project delivery dates.
- Required project activities.
- Excluded project activities.

The identification of project boundaries provides a valuable opportunity for the team, the sponsor, and appropriate customers to enhance their common understanding of the project environment. Well-defined project boundaries are very useful for identifying potential risks or change.

(e) **Roles and Responsibilities** (See 140.06 for further definition)

The definition and mutual acceptance of organizational and individual roles and responsibilities delineates "who will do what". Roles and responsibilities are defined at the organizational level down to the level of each individual on the project team.

The team member's *roles* are the specific titles or positions occupied, such as team leader, designer, permit coordinator, drafter, and so forth. The *responsibility* is the output or outcome expected of the team or individual, such as plan sheets, hydraulic analysis, schedules, and others.

A project-specific table of organization is a good tool for visualizing needed and assigned human resources, their roles and responsibilities, and the relationships between the participants.

(f) **Measures of Success**

Measures of success are tools to assess the accomplishment of critical success factors. Critical success factors define the most important things the team must accomplish to fulfill its mission and achieve project success. These factors are tied to the team mission and project purpose.

The first step is to define critical success factors, and then to determine how to measure accomplishment. Critical success factors are measured incrementally "along the way," not just at the point of project completion. This allows for corrective action (changes) to get "back on track", if needed.

(2) Plan the Work

Development of a work plan begins during Initiate and Align. As the team moves to the next step, Plan the Work, the work plan becomes more refined. The goal is a work plan that is comprehensive, realistic, deliverable and endorsed by all team members.

Planning the work to accomplish the team mission —

It is important to understand and communicate the distinction between the work plan to accomplish the team mission and the completion of the overall project. The overall project includes all phases; Scoping, Design/PS&E (including right of way), and Construction. A team mission is constrained to the phase(s) the team is assigned to work on.

Scoping Project Team Mission

The Scoping Project team develops a work plan, which includes budget estimates and schedules, in PDIS, for Preliminary Engineering (PE), such as Plans, Specifications & Estimates (PS&E); Right of Way (ROW) acquisition activities; and Construction (CN).

Once endorsed, the work product from any phase is a work plan for the subsequent phase(s). For example, the products from the scoping phase are commitments entered into the Capital Improvement & Preservation Program (CIPP). Once in the CIPP, changes to scope, schedule, or budget require completion of the Project Control Form. See the CIPP definition for a web address.

PS&E Project Team Mission

The team that delivers the PS&E project develops a work plan, with a schedule and budget, to perform the work necessary to deliver the products for the Plans, Specifications, and Estimates contract package and advertise for bids. This phase typically includes the Design Documentation package required for design approval, acquisition of right of way, and environmental permits.

(a) **Work Breakdown Structure**

The Work Breakdown Structure (WBS) is a systematic mapping out of all of the project tasks to the lowest level of detail necessary to accomplish the team mission. The WBS is useful toward developing a project scope, schedule, and budget. A task is an assignable item of work, necessary to project delivery that has:

- A definable beginning and end.
- A finite duration.
- An associated level of effort (such as labor, money, equipment, and materials).
- A state of completion that can be estimated at any time.
- A deliverable at the task's completion.

(b) **Master Deliverables List**

WSDOT's standardized Master Deliverables List (MDL) is the starting point for a project-specific Work Breakdown Structure (WBS). The MDL is a comprehensive list that identifies project phases, sub-phases, work processes, and deliverables. In a few cases, the MDL goes to the task level, for example in the environmental area.

Rather than build a work breakdown structure from scratch, project teams eliminate items from the MDL, and add the appropriate tasks. The project team identifies project specific tasks with input from project customers, sponsors, and stakeholders. The tasks developed at the project level must roll up into the deliverables in the standardized MDL. It is to be used by all projects in the Highway Construction Program. The MDL is available on the WSDOT PDIS Internet site; see the PDIS definition for a web address.

(c) **Task Planning**

Task planning serves as an essential intermediate step in progressing from the WBS to schedule layout. Tasks must be defined completely to develop an accurate schedule. The Task Planning Worksheet is available for use in accomplishing this step. It is available at http://wwwi.wsdot.wa.gov/Projects/PDIS/Resources.htm

Task planning includes:

- **Task scope definition.** Just as the overall project requires a well developed and communicated scope, so do the supporting tasks. For example, for "Public Information Newsletters" task, will there be 1, 3, or 5 mailings, to 500, 5000, or 10,000 addresses, and will they be 1, 3, or 5 pages in length? How will they be distributed?
- **Task sequencing.** The accurate sequencing of tasks is critical to the effective development of a realistic and deliverable schedule. The recurring question asked in this process is "To execute this task, what do I need from some other task, and when do I need it?" Identifying task dependencies between specialty areas (Design and Bridge, Environmental and Design, Hydraulics and Right of Way, and others) is critical.
- **Resource assignments.** What organization and what specific individuals will conduct this task? Will 1 or 3 drafters be assigned to this task? Are the specific individuals highly experienced or "first timers"? What availability constraints apply to the individuals assigned to this task: other project assignments, percentage of time committed to this project, training needs, vacations, and the like?

  A resource loaded schedule is key to creating a project schedule that accurately estimates costs and project timelines. The software entry of resources is dependent on this task planning function.
- **Task duration estimates.** Individuals with the applicable expertise can make the most accurate estimates of task duration. Expert judgment guided by historical information is used whenever possible. Project managers must seek input from those who will accomplish specific tasks to accurately estimate the duration, including estimates from specialty groups.

(d) **Risk Assessment**

Project risks can be opportunities (positive events) as well as threats (negative events) that might affect scope, schedule, or budget. Risk assessment is the first phase of project risk management. Its purpose is to maximize the results of positive events and minimize the consequences of adverse events. See *A Guide to the Project Management Body of Knowledge* for more details. Risk assessment includes the following:

1. **Risk Identification** is determining which risks are likely to affect the project and the characteristics of each. This includes both internal (things the project team can control) and external (beyond the direct control of the team) risks. Identify risks by reviewing historical information, interviewing stakeholders and subject matter experts, and team brainstorming.
2. **Risk Quantification** is identifying the risks for which a contingency plan will be developed.

An effective tool for quantifying project risks is the Risk Probability – Impact Matrix shown in Figure 140-5. Each identified risk is assessed for probability of occurrence and degree of impact to the project, should it occur. Risks identified as both high probability and high impact (red risk) are potential "show stoppers" and must be addressed immediately. All risks determined to be medium to high in both probability and impact (yellow risk) are given continuous management, and may warrant the development of contingency plans.

3. **Risk Response Development.** Responses to risk threats include the following:
   - Avoidance — eliminating the threat, usually by eliminating the cause.
   - Mitigation — reducing the potential probability of occurrence or resulting adverse impacts.
   - Acceptance — accepting the consequences either actively (with a contingency plan) or passively.

The reason for conducting risk assessment before schedule and budget building is to provide the opportunity to develop and incorporate schedule and budget contingencies for "at risk" tasks.

Impact				
	High	Gray Area	Yellow Risk	Red Risk
	Med.		Yellow Risk	Yellow Risk
	Low			Gray Area
		Low	**Med.**	**High**
		Probability		

Risk Probability – Impact Matrix
Figure 140-5

The Cost Estimate Validation Process (CEVP®) identifies and quantifies potential risks that can impact a project's budget or schedule. CEVP® is an intense workshop, by a team of engineers and risk managers, where transportation projects are evaluated using risk assessment methods to identify cost and schedule risks. Importantly, the process examines how risks can be lowered and cost vulnerabilities managed or reduced. A dividend of CEVP® is promotion of the activities that will improve final cost and schedule results and communicate those results to the public.

Contact the Cost Risk Estimating & Management office (CREM) or visit their website at http://www.wsdot.wa.gov/projects/cevp/ for additional information.

(e) **Schedule**

All projects in the WSDOT Highway Construction Program are managed using PDIS to schedule required activities that are based on the standardized Master Deliverables List.

The schedule to complete the Team Mission is developed from the Work Breakdown Structure and the subsequent task planning. The schedule is a dynamic tool, that defines the start, order, and duration of project tasks and milestones. A collaboratively developed and comprehensive schedule is a fundamental tool for the management and delivery of the project. It is used to communicate, coordinate, and measure project progress.

Identifying and managing task dependencies between specialty groups (Design to Environmental, Geotechnical to Bridge, Traffic to Design, and so forth) is key to successful project delivery. Establishing milestones and interim deliverables make schedules, and project management easier and more effective by providing short-term goals and clear measurements of progress.

Resource loaded schedules in PDIS allows balancing assigned resources and identifying over-allocated resources. Resource balancing can be accomplished with individual or multiple projects when all schedules are resource loaded. The development of a schedule-based budget is also feasible once a schedule is fully resource loaded.

(f) **Costs and Budget**

The estimated cost to complete the Team Mission is developed from the Work Breakdown Structure, assigned project resources, and a comprehensive project schedule. This estimate is broken down by specialty groups (Bridge, Environmental, Landscape Architecture, Real Estate, and others.), as well as by month ("aged"). It typically includes an appropriate contingency allowance for identified risk areas and inaccuracies in the cost estimating process.

The estimated cost to accomplish the Team Mission includes all activities that will be directly or indirectly charged against the project such as project management, "planning the work," quality assurance and control, and project closure.

(g) **Communication Plan**

Communication, the exchange of information to the relevant parties (including ideas, expectations, goals, commitments, requirements, recommendations, and status), is vital to project success. Effective communication cannot be left to chance. While the theme of communication permeates the entire Managing Project Delivery process, a specific communication plan is an essential tool for successful project delivery. See Chapter 210, "Public Involvement and Hearings."

Communication has many dimensions:

- Internal (within the project).
    1. Vertical (up and down the organization).
    2. Horizontal (with peers).
- External (to stakeholders, local agencies, the media, the customers).
- Written, oral, and various media.
    1. Letters, memos, e-mail.
    2. Internet.
    3. Media (radio, TV, newspapers).
    4. Personal contacts.
    5. Public meetings and hearings.

Every project develops or adopts a communication plan. Communication plan elements include the following:

- Requirements — Determining the information and communication needs of the project stakeholders and participants: who needs what information, when will they need it, and how will they get it.
- Distribution Structure – Defining the following:
    1. To whom information will flow (status reports, data, schedule, etc.)
    2. What methods will be used to distribute various types of information (written reports, letters, meetings, e-mail, Internet).
    3. When each type of communication will be produced.
    4. Who, in the project organizational structure, is responsible for preparing and distributing the identified items.

(h) **Change Management Plan**

Successful project delivery requires active identification and analysis of change when it is encountered. A common human tendency is to deny that change is occurring until it becomes overwhelming. A Change Management Plan (CMP) provides the framework for effective decision making when change occurs. Since it is not possible to foresee all potential changes, a project manager plans the methods by which change will be addressed when encountered.

The CMP includes the following elements:

- A means to anticipate and identify potential changes.
- A process for assessing the effects of a change.
- Techniques and procedures for developing a response strategy.
- A change endorsement process, including identification of the level of endorsement necessary for various types of change. Endorsement of any change is necessary before resources are expended to implement the change.

- A communication strategy to inform all affected parties of the project changes.
- A process for revising the work plan and monitoring performance in accordance with the revised work plan.

WSDOT has adopted standardized change management procedures for the Capital Improvement and Preservation Program (CIPP). These procedures, including a standardized Project Control Form, are used by both Project Development and Program Management. Detailed information on this CIPP change management process, including the Project Control Form, are available on the web. See the definition for CIPP for the web address.

(3) Endorse the Plan

Endorsement constitutes commitment to the work plan and project effort by the key participants. Endorsement is proactive, whereas approval is typically reactive, frequently meaning no more than a lack of objection. By endorsing the work plan, key participants take ownership of the team mission and agree upon the method by which it will be accomplished.

The optimal way to gain endorsement of the project work plan is to include participants in the collaborative development of the work plan. This promotes ownership and facilitates endorsement of the plan by the participants.

The project manager determines whether endorsement for the project work plan will be achieved verbally or documented in writing.

(a) **Customers**

A primary purpose of endorsement is to gain customer commitment to support the project team and work plan. Endorsement by the customers will ensure understanding and acceptance of the project scope, schedule, and budget.

(b) **Project Team**

The project team consists of anyone involved in the development of the project, including specialty groups (such as Environmental, Traffic, Utilities, and others). The purpose of endorsement by the project team is to:

- Share a mutual understanding of the work plan.
- Actively concur that the plan is comprehensive, realistic, and deliverable.
- Build commitment from the entire team to complete the project scope as described in the work plan.

This endorsement validates the working relationship between members of the team and the project manager.

(c) **Sponsor**

Endorsement of the project work plan by the project sponsor, and other managers designated by the project sponsor, provides:

- Sponsor commitments to the defined scope, schedule, and budget.
- Appropriate staff (skill base, knowledge, experience).
- Required tools and resources (computers, technology, office space).
- Sponsor acknowledgement of known risks and associated contingencies.
- Sponsor commitment to advising and assisting in executing the project.
- Sponsor commitment to applying management's authority toward successful accomplishment of the work plan and project.

In order to facilitate sponsor/management endorsement, it is advisable to involve the sponsor(s) in the project work plan development. The level of involvement will vary by project.

(4) Work the Plan

By developing a work plan, the team, project manager, and sponsors comprehensively define project requirements. Endorsement of the work plan represents commitment by key participants and ensures it is consistent with sponsor and customer expectations.

Working the plan is:

- Actively managing those planned elements, including the scope, schedule, & budget.
- Effectively communicating and building on relationships with the team, customers, and sponsors.
- Actively monitoring and managing identified risks and change.
- Communicating changes before they occur.

All projects in the WSDOT Highway Construction Program will maintain current schedules in the PDIS. Project schedules will be updated frequently enough to ensure the project delivery date shown in PDIS is accurate and can be met. Changes that affect the scope, schedule, and budget must be updated in the PDIS schedule.

(a) **Customer Relationships**

- Know the customer's expectations.
- Involve the customers as they wish to be involved.
- Communicate progress to customers.
- Resolve conflict as necessary.
- Manage customer expectations.

(b) **Team Building**

A team must be built and sustained. Teams are dynamic. Team development (forming, storming, norming, performing, excelling) is ongoing and must be continually managed to attain high performance, produce results, and deliver the project.

- A team is a group of individuals who work for a common purpose to produce a specific outcome.
- A team continuously develops group and individual skills to enhance team performance on the project.
- An effective team develops and implements a reward and recognition strategy.
- A team works together to correct mistakes to minimize negative impacts on the project.
- A team works together to learn from accomplishments and mistakes.

(c) **Communicate**

Appropriate frequency and quality of communication between the project manager, team members, sponsor, and customers is essential for project delivery. Project managers and teams apply the Communications Plan adopted for the project.

(d) **Managing Scope, Schedule, and Budget**

Successful project delivery requires active management of the scope, schedule, and budget. Successful project management will meet or exceed customer, sponsor, and stakeholder expectations (on time, within budget, and meeting requirements).

Active management of scope, schedule, and budget includes:

- Endorsing a base line scope, schedule, and budget.
- Ongoing communication with all team members to get frequent and accurate data.
- Regular schedule and budget monitoring and evaluation with revisions to reflect actual progress, as appropriate.
- Regularly reporting progress to customers and stakeholders.

The tradeoff triangle, as shown in Figure 140-2, represents the linkages between the scope, schedule, and budget. It functions as a link and pin truss where the sides must remain connected. When one side changes, the influences or impacts of that change on the other two sides must be managed. One side is prioritized, one side optimized and the remaining side is accepted.

A cardinal rule in project management is that, whenever scope, schedule, or assigned project resources change, a corresponding budget change is mandatory. The application of this rule often requires involvement and assistance from others who will be expected to endorse the resulting updated plan.

(e) **Manage Change**

Frequent and meaningful communication between project participants (including team members, sponsor, and customers/stakeholders) is an essential element of actively managing change. Recognizing and confronting change rather than avoiding it is key to successful project delivery. It is the responsibility of the team members familiar with the scope, schedule, and budget to continuously identify potential changes.

Value can be added through appropriate change management, including dollar and time savings. Active change management, through use of an established Change Management Plan, can minimize adverse effects on project delivery. Proactive endorsement (by the necessary authority) of changes to project scope, schedule, or budget must be obtained before resources are expended to implement the change.

See 140.05(2)(h), Change Management Plan, for additional information on the change management process, including projects in the CIPP.

(5) Close the Project

To conduct an effective closure, or phase transition, it is important for the project manager and team to define what closure means for this team and project. (See Figure 140-6). Adequate time to accurately and sufficiently prepare project documentation for closure should be planned for and included in the project schedule. The following are common closure situations:

- Final closure. The final project purpose has been attained. If so, this is probably an ultimate closure for the overall project effort.
- Transition. One team has accomplished its mission; a transition or handoff is made to a subsequent team tasked to continue development toward the project purpose. This is typical between major project development phases such as design and construction. A smooth transition is critical for successful delivery of the product for the customers.
- Shelf. A project effort that has reached a temporary closure point and is being put "on the shelf" is a transitional event to a future team. Comprehensive documentation of the project status, backup, and decisions (with justifications) is especially critical in this situation to minimize rework when the effort is restarted.

(a) **Reaching Closure With Customers**

This is the process of following up with the project customers and all affected parties. This includes the review of successes and failures in the eyes of the customers, team, and sponsors in relation to the project. This is planned for throughout the project and might occur at multiple intermediate stages of the project.

(b) **Demobilize**

A planned strategy for the reassignment or redistribution of project staff and resources. A demobilization/remobilization strategy is tied to the project schedule and evaluated and updated accordingly.

(c) **Archive**

The team addresses archiving as follows:

- Plan archiving at the beginning of the project.
- Plan the documentation for the permanent design file as required by other *Design Manual* chapters and selected MPD documents including the project work plan.
- Include archiving the PDIS project schedule.
- Budget for archiving effort.
- Tailor the archiving effort based on project size and complexity to comply with legal requirements (including preparedness for Freedom of Information Act requests) and to provide an administrative record of the project.

- Archive throughout the project.
- Adhere to agency-wide archiving process and standards.
- Communicate guidelines to team through the closure plan.

(d) **Learn and Improve**

The purpose of this element is to build corporate knowledge and skills and minimize the need for those in the future to "reinvent the wheel." This evaluation element is valuable for sharing with others (including other WSDOT staff and potential future team members) what was learned on this project: "What went well, what didn't, and why." The areas of evaluation usually include:

- Staff evaluation and development.
- Comparison of initial objectives with results.
- Review of significant changes, reasons, and results.
- Review identified risks; did they occur and what impacts did they have on the project?
- Effectiveness of the work plans.
- Budget assessment.
- Customer satisfaction.
- Comparison to measures of success as established in the work planning process.

(e) **Reward and Recognize**

Rewarding and recognizing team members and customers, as well as celebrating overall team success, are important steps and contribute toward the success of future project team endeavors.

140.06 Responsibilities

(1) Project Sponsor

The project sponsor provides the direction, authority, and resources for implementing Managing Project Delivery on projects. Typically, the project sponsor is a department executive, office manager, or organizational unit manager who assigns the project manager.

(2) Project Manager

The project manager follows the Managing Project Delivery process and applies specialized knowledge, skills, tools, and techniques to carry out the project sponsor's direction through project completion. A project manager has the following responsibilities:

(a) **To the project sponsor:**

- Come to a mutual understanding of the project work plan (including scope, schedule, budget, and other primary elements of the project) to obtain the endorsement of the project sponsor.
- Communicate project progress using appropriate project status reports and meetings.
- Identify when project sponsor endorsement will be required throughout the project.
- Communicate any significant changes in scope, schedule, budget, or customer satisfaction, during the project.
- Deliver the project in accordance with the endorsed work plan, including schedule and budget.

(b) **To the project customers:**

- Understand customer needs and expectations (listen).
- Communicate progress to customers (keep them informed).
- Communicate change and provide options to gain endorsement of preferred choices.
- Deliver the project in accordance with the endorsed project work plan.
- Solicit and incorporate customer feedback in project closure.

(c) **To the project team members:**

- Provide leadership and management.
- Be an advocate for the team.
- Obtain team endorsement on the project work plan, and major changes.

- Facilitate internal and external communication.
- Manage changes in scope, schedule, and budget.
- Initiate and manage ongoing team building.
- Mentor team members in project management.

(d) **To other project managers:**

- Mentor each other by sharing experiences and knowledge.
- Encourage each other to achieve project management excellence.
- Share resources when appropriate.
- Coordinate project work plans.

(3) Project Team

Each member of the project team follows the Managing Project Delivery process and applies specialized knowledge, skills, tools, and techniques to carry out the team's mission through project completion. A project team member has the following responsibilities:

(a) To fellow team members:

- Communicate in an open, honest, and sincere manner.
- Make a deliberate effort to maintain and build team cohesiveness.
- Ask for what you need.
- Deliver what others need.
- Be prepared and willing to work with team members to accomplish project goals.

(b) To the project manager:

- Manage tasks proactively.
- Report progress in a clear, coherent, timely, and accurate manner.
- Offer your best opinions on project issues.
- Present a "get the job done" attitude.

140.07 Documentation

Managing Project Delivery reflects WSDOT best practices along with the industry standards for project management. A project work plan provides team leaders, management and executives a method of communicating all aspects of a project. It is routine for work plans to be reviewed by Executives during regional Quarterly Report Meetings. Documentation of these elements is an effective means of attaining a common understanding among team members, the project sponsor, and customers. Documentation of a project work plan includes:

(a) Team initiation and alignment elements

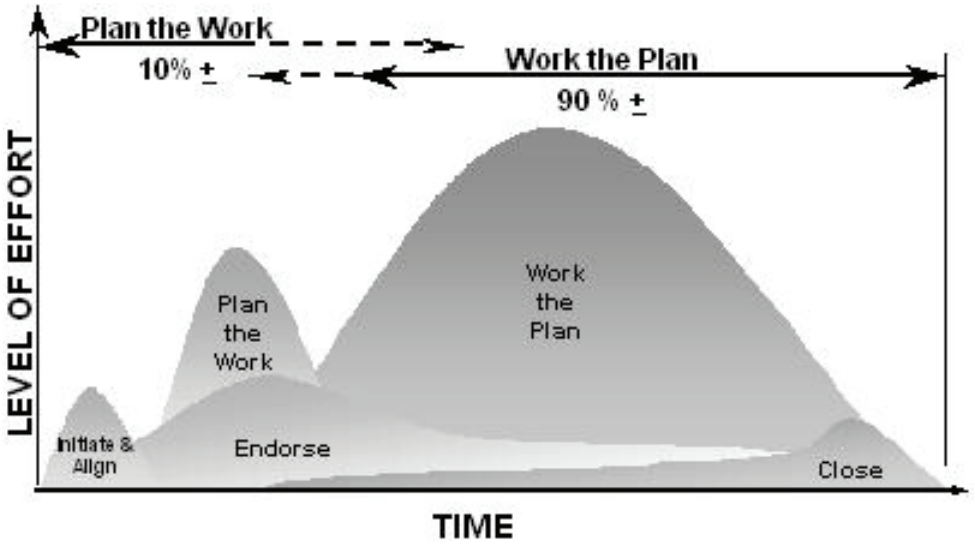
(b) Schedule developed and maintained in PDIS

(c) Budget

(d) Communication Plan

(e) Change Management Plan

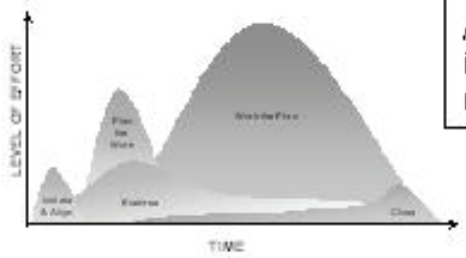
A list of documents that are to be preserved [in the Design Documentation Package (DDP) or the Project File (PF)] is on the following website: http://www.wsdot.wa.gov/eesc/design/projectdev/



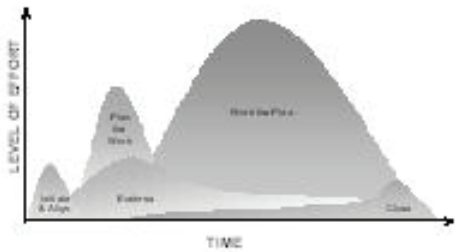
Phase Transition

A project purpose can span the phases of project development. MPD is used **iteratively** at each phase of project development.

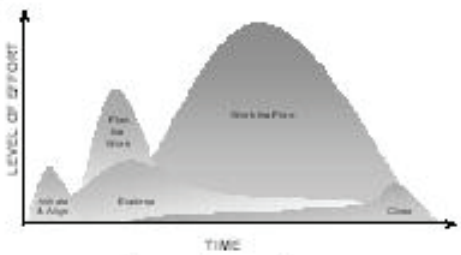
As one team "closes" their phase, a new team initiates and aligns their phase of the project. This repeats until the Project Purpose is attained.



Scoping



Design/PS&E



Construction

Using MPD Iteratively
Figure 140-6